

Copyright Office

[Docket No. 86-4]

Policy Decision on Copyrightability of Digitized Typefaces**AGENCY:** Copyright Office, Library of Congress.**ACTION:** Notice of policy decision.

SUMMARY: The purpose of this notice is to inform the public that the Copyright Office has decided that digitized representations of typeface designs are not registrable under the Copyright Act because they do not constitute original works of authorship. The digitized representations of typefaces are neither original computer programs (as defined in 17 U.S.C. 101), nor original databases, nor any other original work of authorship. Registration will be made for original computer programs written to control the generic digitization process, but registration will not be made for the data that merely represents an electronic depiction of a particular typeface or individual letterforms. If this master computer program includes data that fixes or depicts a particular typeface, typefont, or letterform, the registration application must disclaim copyright in that uncopyrightable data.

EFFECTIVE DATE: September 29, 1988.

FOR FURTHER INFORMATION CONTACT: Dorothy Schrader, General Counsel, Copyright Office, Library of Congress, Washington, DC 20559. Telephone (202) 287-8380.

SUPPLEMENTARY INFORMATION:**1. Background**

Under section 410(a) of the Copyright Act of 1976, title 17 of the United States Code, the Register of Copyrights determines whether the material submitted for registration "constitutes copyrightable subject matter and that other legal and formal requirements have been met" before issuing a certificate of registration.

To be registrable and copyrightable, a work must constitute an "original work of authorship." 17 U.S.C. 102. Useful articles are not protected except to the extent the articles contain artistic features capable of existing separately and independently of the overall utilitarian shape. Variations of typographic ornamentation [or] "mere lettering" are not copyrightable. 37 CFR 202.1(a). In *Eltra Corp. v. Ringer*, 579 F.2d 294 (4th Cir. 1978), the Fourth Circuit upheld the Office's refusal to register a claim to copyright in typeface design under its then regulation, 37 CFR 202.10(c)(1978) [now codified in the Copyright Act in the definition of

"pictorial, graphic, or sculptural works"]. The *Eltra* court reasoned that "it is patent that typeface is an industrial design in which the design cannot exist independently and separately as a work of art." 579 F.2d at 298.

The decision in *Eltra Corp. v. Ringer* clearly comports with the intention of the Congress. Whether typeface designs should be protected by copyright was considered and specifically rejected by Congress in passing the Copyright Act of 1976. The 1976 House Report states:

A "typeface" can be defined as a set of letters, numbers, or other symbolic characters, whose forms are related by repeating design elements consistently applied in a notational system and are intended to be embodied in articles whose intrinsic utilitarian function is for use in composing text or other cognizable combinations of characters. The Committee does not regard the design of typeface, as thus defined, to be a copyrightable "pictorial, graphic, or sculptural work" within the meaning of this bill and the application of the dividing line in section 101. [H.R. Rep. No. 1476, 94th Cong., 2d Sess. 55 (1976)].

In rejecting copyright protection for typeface designs, the Congress in addition deferred a decision on a more limited form of protection under proposed ornamental design legislation. Title II of the 1976 copyright revision bill as passed by the Senate could have protected typeface designs, but the House of Representatives had doubts about even this limited form of protection. Consequently, only copyright revision passed. H.R. Rep. No. 1476 at 50 and 55. Design legislation has yet to be enacted, and Congress has chosen not to include typeface designs within the Copyright Act's definition of pictorial, graphic or sculptural works.

The Copyright Office has received applications to register claims to copyright in material variously termed "data," "database," "computer program," "compilation of data," and "typefont data set," which relate to, or represent, digitized versions of typeface designs. A Notice of Inquiry was published in October 1986 requesting public comment regarding the registrability of this material. ((51 FR 36410 (Oct. 10, 1986))). The Notice raised primarily four questions about the nature and extent of any copyrightable authorship in digitized typography, apart from the typeface design itself: whether there exist a variety of ways to express instructions for creating the same typeface design; are there any copyrightable elements, apart from the unprotectible typeface design, which comprise the "original work of authorship;" does the "information,"

"instructions," or "data" comprise a computer program, compilation or database; and, finally, if registration is permitted, what would be the appropriate form of deposit?

The comment period was extended twice (52 FR 3146 and 52 FR 23476) to allow full-public comment. A total of 19 initial and reply comments were received, including a videotape demonstration of the digitization process and other exhibits.

2. Technology and the Digitizing Process

In describing the process of the digitization of typefont characters, the Office will employ technical terms, for which we adopt the following definitions. "Digital typefont" is a bitmapped digital representation of an actual analog typeface design, stored in binary form on magnetic or optical media, or Read-Only-Memory (ROM) mounted on a circuit board. Sometimes, the ROM on the circuit board is assembled into a plastic cartridge which is inserted into a laser printer or other microprocessor-driven device. When decoded and interpreted, by the "bitmapping code" software, the digital representation of the design will reproduce the appropriate character. "Bitmapping" refers to the technology that allows control of individual pixels on a display screen to produce graphic elements of superior resolution, permitting accurate reproduction of arcs, circles, sine waves, or other curved images. A "bitmapped character," whether used on a computer screen or on a dot-matrix or laser printer, is a dotted representation of an analog letter or character image where dots are so close together that when reduced to actual printed or displayed size, they form an image or character without the need to connect the dots.

To create a digitized typeface from an existing analog typeface, analog visual representations of characters are scanned and represented as a collection of discrete picture elements, called pixels. Pixels can be efficiently encoded in digital form on any convenient storage medium. The medium can be magnetic (e.g. tape, disk or diskette), electronic (e.g., ROM cartridge), or optical (e.g., video-disk). The encoded digitized representation is then organized as bits of information, manipulated and changed (usually reduced to minimize storage requirements) and placed in a format usable with a specific program and compatible digital typesetter.

Typically, a specialized computer circuit in the printing device reads the information from the storage media or

cartridge and causes a laser beam to draw a representation of a particular typefont character on a cylindrical surface in direct response to the digital data and instructions in the media or cartridge. This image is then transferred by a process, similar to printing, to paper from which the information is read or the printer may drive a set of wires against an inked ribbon that places dots on the paper. The visual representation appears once again.

There are basically three techniques applied to represent characters digitally: Bitmapping, outlining and stroke definition. A digitized typeface could be prepared by bitmapping alone, but it is more common to use a combination of the three techniques to improve the quality of the typeface.

Bitmapping is a dot-by-dot representation of each character. A different bitmap is required for each size and style of a character, and there are several ways to create a bitmap. The most popular ways are by scanning black and white images, scan converting a digital outline representation (soft scanning) using software written for this purpose, building up an image bit-by-bit using an interactive editor on a computer, and through a combination of scanning and editing.

In the outline method, lines or curves define the boundaries of typeface characters. The outlines can consist of straight line segments only or straight line segments along with abstract representations of the curves. The digital information, comprised of instructions and data, is fixed by a computer operator who digitally locates only the outlines of characters. In order to form a completed letter on a screen display or on paper when printed out, an outline font program instructs a computer or printer logic to fill in the outline of the character. If a laser printer is used, the beam sweeps from side to side or up and down within the boundaries of the letter, filling in the bounded area with dots that will show up as solids on the paper or screen.

In the stroked definition method, characters are represented like the "strokes" of a pen or brush following the path of a straight or curved line. The computer operator must define the characteristics of the "pen" or "brush," such as what occurs at corners and stroke endings. Ultimately, these descriptions must be converted into bitmaps.

Finally, digitization techniques may be used to create a new typeface—one that has no prior analog counterpart.

3. Summary of Comments

The Copyright Office received 19 initial and reply comments in response to its Notice.

Two comments maintain that the digitized typefaces are not copyrightable. The first argues that the only difference between the digitized version and the unprotectible typeface itself is that the former is "read" by a machine to create the visually perceptible typeface. The "look-up" table in a bitmap, this comment continues, is a one-on-one correlation which involves no creativity. The algorithms used in the outline method likewise involve *de minimis* judgment and creativity. Finally, the commentator cautions that protection of digitized versions of typeface may inhibit the standardization of character matrixes that facilitate the compatibility of software for personal computers.

The second comment opposing registration declares that bitmaps are static data, fixed representations of images at a given resolution. This comment compares the static dot pattern representation of each letter to the patterns cast and carved onto metal in medieval times.

In support of registration, eleven comments espouse variations of the basic proposition that the data and instructions which comprise the digital typefont are computer programs, copyrightable databases or some protectible hybrid of the two. The themes which run through their various comments are that the data and instructions are a "work" apart from the typeface itself, the "work" is "used" directly or indirectly in a computer to bring about a certain result" and qualifies as a computer program within the meaning of section 101 of title 17, and/or the ultimate shape of the typefont character does not predetermine its digital representation and elements of human selection and arrangement are required, constituting a protectible database.

One comment states that the "work" is a computer program which operates on a data stream and is configured in a particular format. Another amplifies this position, explaining that execution of the program calls up stored data in the form of digitized typeface instructions and converts the instructions into printed typeface characters.

Two comments take the position that the "rule of doubt" should be used. The first argues that digitized databases are both databases and programs, and, since neither can be read by the Office, ultimately the courts should decide on their copyrightability. This comment

advocates that, in any event, the "work" is protectible as a program, compilation or separately as a literary work. Another comment claims protection for the edited, compiled set of instructions and data as a literary work. The second comment espousing rule of doubt would limit the registration to the typeface database.

Several comments state that not all typeface programs and databases are protectible. Purely mechanical translations from analog to digitized typefaces, they acknowledge, are not copyrightable. For example, they state that protection should not be extended where an analog typefont is merely scanned into digital form with no editing or selection of font characteristics, or where there is mere duplication of preexisting digital typefont without further editing.

One comment recommends considering typefont a special class of program. Another one opines that the protectible work is a digital photograph.

Copyrightable expression attaches, another comment contends, in that programming choices exist apart from the functional data and algorithms utilized in the program expressing the typeface design.

One comment recommends protecting the typefont as a software/database hybrid. The "work" is the integration of all elements of the software and database. The software should be protected separately also, this comment continues, because it is a different work than the typeface, and programs are protectible, it is argued, even if they ultimately produce an uncopyrightable end product.

Another comment describes the choices inherent in font digitization, and argues that the combination of data and instructions satisfies the Copyright Act's definition of the term "computer program." The digital image, it maintains, can be represented in different computer languages using different techniques. This comment also states that no distinction is drawn at the machine language level between data and instructions. In general purpose programming languages, the surface separation between data and algorithms is for the ease of human programmers. Programs are like sentences: Algorithms (verbs) act upon data (nouns). In some languages, data and algorithms are tightly bound in a single program. In others, the data and algorithms are initially stored separately, though they must be conjoined in order for the computer to successfully execute the instructions for rendering digital type. This comment further argues that the

conversion from analog to digital is not an automatic computer process—different printers read different computer languages and this must be factored into the translation; the translation is a derivative work.

Another comment states that programs to generate typeface design can be written in various languages and for many different machines with distinct programs. Typeface programs, it is argued, are original and creative and should be protected.

4. Policy Decision and Rationale

The proponents of copyright registration for data or other elements related to digitized typefaces seek, as they must, to present arguments for protection of data, or program instructions, or hybrid works consisting of both data and instructions that are entitled to copyright apart from the uncopyrightable typeface designs and typefonts. Both the Congress and the Fourth Circuit Court of Appeals in *Eltra Corp. v. Ringer* decided that analog typeface designs are not now copyright subject matter. The Copyright Office concludes that typefaces created by a computerized-digital process are also uncopyrightable. Like analog typefaces, digitally created typefaces exhibit no creative authorship apart from the utilitarian shapes that are formed to compose letters or other font characters.

Congress has not only rejected copyright protection for typeface designs. It has refused to enact a more limited form of protection, the proposed "design protection law," which might be a vehicle for typeface design protection.¹

In making this decision on registration for digitized versions of typefaces, the Copyright Office has been conscious of the need for caution to avoid a decision that would undermine the clear congressional and judicial findings that typeface designs are not copyright subject matter. Moreover, a typefont is not copyrightable since it constitutes the useful article itself.

The issue then is whether the process of computer assisted digitization of uncopyrightable typeface designs and typefonts creates compilations of data or computer program instructions that are copyrightable and separate from the uncopyrightable elements. We conclude that computer programs used to control the general digitization process and that otherwise meet the standards for

protection are registrable notwithstanding their use in generating unprotectible typefonts, but the claim to copyright must exclude any data that merely depicts the typeface or letterforms.

Although most comments favored protection of the data/instructions actually depicting particular digital typefonts, our analysis of the copyright statute and relevant judicial precedent, as well as the arguments of the comments that opposed registration (and even the comments of some of those supporting registration of some elements), convinces us that any data that merely transforms an analog visual representation of a typeface or letterform into a digital electronic typefont or letterform is not protectible as a work of authorship.

The Copyright Act, 17 U.S.C. 101 *et seq.* (1976), defines the term compilation as "a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship." 17 U.S.C. 101. To be an original work of authorship, a compilation must include subjective elements of human selection and arrangement. *Financial Information, Inc. v. Moody's Investor Service, Inc.*, 808 F.2d 204, 206-08 (2d Cir. 1986), *cert. denied*, 108 S.Ct. 79 (1987). Because the typefont data is determined by the ultimate shape of the typeface character, and requires *de minimis*, if any, selection and arrangement, it does not qualify as a compilation or any other original work of authorship.

Proponents of registration argued that the data representing a digitized typeface should be copyrightable because, after the initial rendering of the letterform into electronic digital form, there is selection, coordination, or arrangement of data/instructions in order to generate an acceptable, final typeface image. One commentator drew an analogy to "connect-the-dots" or "fill-in-the-blanks" illustrations in children's books. The analogy is unpersuasive. A "connect-the-dots" illustration is copyrightable only if the "connected" illustration is a copyrightable pictorial or graphic work. In the case of typeface "connect-the-dots," the "connected" illustration is an uncopyrightable typeface, and the connecting process is indistinguishable from the creation of the typeface design itself.

Proponents also argued that the data representing a digitized typeface is copyrightable even though the end result—a typeface or typefont—is

uncopyrightable. By analogy to a cookbook, they argued that the explanation and illustration of recipes is copyrightable even though the end result—the food product—is not. The Copyright Office agrees, of course, that original explanations and illustrations in cookbooks are copyrightable. But neither lists of ingredients nor the method of preparing the food product is copyrightable. The Copyright Office finds that digitized typeface data is more like an uncopyrightable list of ingredients than a copyrightable explanation or illustration of a process.

Before the advent of digitized typeface technology, arguments were made that, in creating new typeface designs, artists expended thousands of hours of effort in preparing by hand the drawings of letters and characters that ultimately would lead to the creation of an original typeface design. After several years of consideration and a public hearing, the Copyright Office found that this effort did not result in a work of authorship. The Office refused to register claims in typeface designs or in the drawings of the letters and typefont characters because the design choices were responsive to the functional characteristics of typefonts used in high-speed printing. That is, no work of authorship existed separate from the utilitarian aspects of typefonts and letterforms. That decision was upheld in *Eltra Corp. v. Ringer*.

Under earlier technology, typeface designs were fixed in wood blocks, in cold metal, or in film fonts. With computer-digital technology, the typeface is fixed in an electronic font. The Copyright Office finds that no work of authorship is created by the process that fixes or depicts a particular typeface in a digital electronic form. Like analog typeface design, the design choices or any selection of data involved in the bitmapping, outlining, and stroke definition techniques are limited by the objective of rendering or fixing the uncopyrightable electronic font. This finding applies both to the initial scanning of the letterforms and to the subsequent refining of the typeface by "curving," "connect-the-dots," and other techniques. The data created is an electronic depiction of the typeface. In fact, there are fewer authorship choices involved in transforming an existing analog typeface to an electronic font than in using the digitization process to create a new typeface design. Yet clearly the typeface design and the process of creating it are uncopyrightable whether the process is digital or analog. The use of the computer in this process neither

¹ The Senate design bill, S. 791, would specifically protect typeface designs. The House bills (H.R. 379; H.R. 1179; H.R. 1603) omit specific reference to typeface, but the definitions of the bills probably include typeface protection.

diminishes nor adds to the factors that determine copyrightability.

The Copyright Office observes that more digitization of even a pre-existing copyrightable work does not result in a new work of authorship. The digitized version is a copy of the pre-existing work and would be protected as such, but no new work of authorship is created. A novel may be digitized and stored in an electronic medium. Protection depends on the status of copyright in the novel; digitization does not add any new authorship.

Although the master computer program used to control the generic digitization process is protectible and may be registered, if original, this protection does not extend to the data fixing or depicting a particular typeface or typefont or to any algorithms created as an alternative means of fixing the data. The Office will register a program that can be used to create digitized versions of various typefaces but will not register the data used to depict a particular typeface or individual letterforms. If the computer program submitted for registration includes data that fixes or depicts a particular typeface, typefont, or letterform, the Office requires an appropriate disclaimer of copyright on the application to exclude the uncopyrightable data.

The Copyright Office in this decision has been conscious of the interests of typeface developers and the interests of typeface users, who, in accordance with a congressional decision not to protect typefaces, are entitled to copy this uncopyrightable subject matter. While copyright protection is not available for digitized versions of typefaces, the typeface industry has other avenues of protection through unfair competition laws, contract, and perhaps trade secrecy and trademark protection.

On the other hand, the congressional decision not to protect typeface designs, in addition to adhering to traditional standards of original authorship, reflects a concern about inappropriate protection of the vehicles for reproducing the printed word. If copyright protection existed for the data representing a particular typeface design, a printer who innocently used an infringing electronic typefont to print a public domain book would presumably infringe the copyright in the data fixed in the electronic font. The Copyright Office is persuaded that this result would undermine the congressional policy against protection for typeface designs.

The Office therefore concludes that, if copyright protection for the master computer program alone is not adequate

to encourage creativity in the field of computer-assisted typeface design, any broader protection, if appropriate, should be legislated by Congress rather than established by administrative decision-making. Congress is the appropriate forum for debating the concerns that infect the question of legal protection for typeface designs or digitized representations of typefaces. Congress can legislate limitations on the scope of protection, including any appropriate exemptions for printers or other secondary, "innocent infringers."

Dated: September 13, 1988.

Ralph Oman,
Register of Copyrights.

Approved by:

James H. Billington,
The Librarian of Congress.
[FR Doc. 88-22394 Filed 9-28-88; 8:45 am]
BILLING CODE 1410-07-M

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[88-85]

NASA Advisory Council (NAC), Space Station Science and Applications Advisory Subcommittee (SSSAAS); Meeting

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of meeting.

SUMMARY: In accordance with the Federal Advisory Committee Act, Pub. L. 92-463, as amended, the National Aeronautics and Space Administration announces a forthcoming meeting of the NASA Advisory Council, Space Station Science and Applications Advisory Subcommittee.

DATE AND TIME: October 13, 1988, 8:30 a.m. to 5 p.m., and October 14, 1988, 11 a.m. to 3 p.m.

ADDRESS: South Shore Harbour Conference Center, Lake Shore Boulevard, FM 2094, League City, TX 77573.

FOR FURTHER INFORMATION CONTACT: Mr. Joseph K. Alexander, Code E, National Aeronautics and Space Administration, Washington, DC 20546 (202/453-1430).

SUPPLEMENTARY INFORMATION: The Space Station Science and Applications Advisory Subcommittee reports to the Space Science and Applications Advisory Committee (SSAAC) and the Aerospace Medicine Advisory Committee (AMAC) and consults with and advises the NASA Office of Space Science and Applications (OSSA) on the

new capabilities to be made available by the Space Station program and how these may be most effectively utilized. It also advises the NASA Office of Space Station (OSS) on how the Space Station program may most effectively support potential science and applications users. The Subcommittee will meet to discuss comments from NASA on the SSSAAS summer study recommendations, future plans from OSSA and updates of various programs in progress, and reports on crew interaction with science. The group is chaired by Dr. Franklin Lemkey and is composed of 20 members. The meeting will be open to the public up to the capacity of the room (approximately 50 people including the members of the Subcommittee). It is imperative that the meeting be held on these dates to accommodate the scheduling priorities of the key participants.

Type of meeting: Open.

Agenda:

Thursday, October 13

8:30 a.m.—Welcome and Introduction.

9 a.m.—Discussion: Comments and Recommendations from NASA on SSSAAS Summer Study in Hyannis, MA; Office of Space Science and Applications (OSSA) plans for future solicitations and announcements of opportunity.

10:30 a.m.—Report on Memorandum of Understanding.

11 a.m.—Results of Level II Preliminary Requirements Review.

2 p.m.—Joint Science Utilization Study.

2:30 p.m.—OSSA Microgravity Science and Applications facilities.

3 p.m.—Crew Interaction with Science.

4:30 p.m.—Extended Duration Crew Operation.

5 p.m.—Adjourn.

Friday, October 14

11 a.m.—Contamination Report.

1:30 p.m.—Report on Pressurized Volume Task Force Report.

2:30 p.m.—Summary and Future Actions.

3 p.m.—Adjourn.

September 23, 1988.

Ann Bradley,

*Advisory Committee Management Officer,
National Aeronautics and Space Administration.*

[FR Doc. 88-22287 Filed 9-28-88; 8:45 am]

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